

### **REMARKS**

Claims 2-40 and 42-80 are now pending in the application. In response to the restriction requirement imposed by the Examiner, Applicants confirm that Claims 61-80 are withdrawn from further consideration as being drawn to a non-elected invention, in accordance with the provisional election made with traverse pursuant to a telephone conversation between the Examiner and David Suter on October 18, 2004. Various minor amendments have been made to the specification and claims simply to overcome the objections to the specification and claims, as well as the rejections of the claims under 35 U.S.C. § 112. Such amendments to the claims contained herein are of equivalent scope as originally filed and, thus, should not be construed as narrowing amendments. The Examiner is respectfully requested to reconsider and withdraw the rejections in view of the amendments and remarks contained herein.

### **RESPONSE TO RESTRICTION REQUIREMENT**

In the Office Action dated November 1, 2004, the Examiner determined that Claims 2-80, are subject to a restriction requirement. The Examiner has required restriction to one of the following inventions – Group I: claims 2-60 drawn to thermal insulating materials and methods for producing the materials, classified in Class 252, subclass 62; Group II: claims 61-65 drawn to a method of forming an insulating coating, classified in Class 427, subclass 453; and Group III: claims 66-80 drawn to a thermally insulated article, classified in Class 428, subclass 701.

Applicants traverse the restriction requirement, as the examination of the above identified claims does not appear to impose a serious burden upon the Examiner.

However, to facilitate prosecution, Applicants hereby elect to prosecute the claims of Group I (Claims 2-60) in accordance with the provisional election made with traverse on October 18, 2004. As such, Claims 61-80 have presently been withdrawn from consideration.

#### **DRAWINGS**

The Examiner has objected to the drawings for certain informalities, namely to Figure 8 for a purported misspelling of the word "chemistry". The Replacement Sheet of Figure 8 submitted on December 9, 2003 (submitted along with replacement sheets for all Figures 1-15) appears to have one occurrence of the word chemistry, and Applicants believe it is properly spelled. As Applicants are not able to find the misspelling in the most recently submitted version of the drawings, Applicants would appreciate guidance from the Examiner in locating the typographical error, or in the alternative for the Examiner to withdraw the objection and enter the replacement figures identified above.

#### **SPECIFICATION**

The specification stands objected to for certain informalities. Applicants have amended the specification according to the Examiner's suggestions. In particular, Applicants have amended the temperature range on Page 10 at Paragraph 5 to recite the temperature range of between about 500°C and about 1700°C. Support for this amendment is found on page 21 line 20 and Claim 32. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

Further, the specification was further objected to as failing to provide proper antecedent basis for the claimed subject matter in Claims 1, 5, 6, 17, 35 and 41. In particular, the Examiner objected to the specification for failing to provide proper antecedent basis for mixtures of solvents; salts; grinding elements; and alcoholates for Claims 5,6,17 and 35, respectively. Claim 1 was previously cancelled in a prior office action, and Claim 41 is presently cancelled, thus obviating the objection on the basis of these claims. Many of the components recited in the specification and as limitations in the above identified claims are referred to in a plural context, implying to one of skill in the art that mixtures may be included. Thus, for example, Applicants submit that there is a proper antecedent basis for mixtures of solvents at page 8 paragraph 4. Mixtures for the metals that form the composition are contemplated and disclosed at page 3 paragraph 4; and oxides or salts of the individual compounds are generally referred to as being plural on page 19 paragraph 2. On page 7 paragraph 5, the second component comprises at least one of the listed compounds, implying one or more of the compounds. Page 8 paragraph 2 states there can be mixed salts of the listed salt compounds, also referred to in the plural on page 20 paragraph 3. A plurality of alcoholates are preferably produced on page 10 paragraph 5, page 11 paragraph 2, or are used in the sol-gel process on page 21 paragraph 3 and page 22 paragraph 2.

It is not necessary that the application describe the claim limitations exactly, but only so clearly that persons of ordinary skill in the art would recognize from the disclosure that applicant's invention included those limitations. In re Smythe, 178 USPQ 122 (CCPA 1977). In the present application, Applicants have provided that mixtures of the elements are within the scope of the claims, and further one of skill in the art would readily recognize

that such mixtures are encompassed by the disclosure of a plurality of components and thus the specification provide sufficient antecedent basis for the claims.

Further, the transitional phrase “comprising” is inclusive or open-ended and permits the inclusion of unrecited additional steps, elements, or materials. *See e.g., In re Baxter*, 210 USPQ 795, 803; *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948). As such, the claims include mixtures of such components, whether explicitly stated in a claim limitation or not. The specification here supports such an interpretation and obviates the objection for failure to provide antecedent basis by referring to components in a plural form. As such, Applicants respectfully request withdrawal of the objections to the specification for lack of antecedent basis.

#### **OBJECTION**

Claim 36 stands objected to for certain informalities. Applicants have amended Claim 36 according to the Examiner's suggestion to recite “formates”. Therefore, reconsideration and withdrawal of this objection are respectfully requested.

#### **REJECTION UNDER 35 U.S.C. § 112**

Claims 29 and 39 stand rejected under 35 U.S.C. § 112, first paragraph, as failing to comply with the written description requirement. Claims 2 and 4 stand rejected under 35 U.S.C. § 112, second paragraph, as being indefinite for failing to particularly point and distinctly claim the subject matter which Applicant regards as the invention. These rejections are respectfully traversed.

Claim 29 stands rejected under 35 U.S.C. 112, first paragraph. Applicants have amended the claim to recite the limitation of “oxides and salts of M and Me soluble in a water and/or alcohol”. Support for this amendment is found on page 11 paragraph 3, for example. As Claim 39 further depends from Claim 29, it likewise incorporates the limitation of soluble oxides and salts of M and Me. Accordingly, Applicants request that the Examiner withdraw the rejection of Claims 29 and 39.

Claim 2 has been amended to recite oxides of aluminum, hydroxides of aluminum, and oxy-hydrates of aluminum, in accordance with the Examiner’s suggestion. Support for this amendment is found on page 8 paragraph 4 and on page 20 paragraph 3. Claim 4 has been amended to provide clarification of the drying step, in accordance with the Examiner’s suggestion. Accordingly, Applicants request that the Examiner withdraw the rejection of Claims 2 and 4.

#### **REJECTION UNDER DOUBLE PATENTING**

Claims 9, 11-15, 22, 24-28, 40, 42-48 and 55-60 stand rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over Claims 1-6, 11 and 13 of U.S. Patent No. 6,602,814.

The present case is a divisional of parent case U.S. Patent No. 6,602,814 (U.S. Serial No 09/622,526). The claims were subject to a restriction requirement pursuant to 35 U.S.C. §§121 and 372, and Applicants were required to elect a single invention from Groups I – VI. Applicants elected to prosecute claims 1-19 directed to Group I.

The present application has claims directed to at least two of Groups II, III, IV, V, and VI identified in the original application. 35 U.S.C. §121 prohibits the use of an

issued patent that was subject to a restriction requirement to be used as a reference against a divisional application that is filed prior to that patent issuing. MPEP 804.01 states that “this apparent [statutory] nullification of double patenting as a ground of rejection or invalidity in such cases imposes a heavy burden on the Office to guard against erroneous requirements for restrictions”. Here, the restriction requirement was involuntarily imposed on Applicants in the parent case (U.S. Patent No. 6,602,814) of which this case is a divisional application. The same ‘814 patent forms the basis of the obviousness type double patenting rejection.

Since a restriction requirement has also been imposed in the present case, and Applicants have elected to prosecute Claims 2 through 60 (directed to Invention I), only these claims will presently be addressed in the context of the obviousness type double patenting rejection. While many of the claims in the present case have been amended to be in independent form, they are substantially consonant with the claims as originally filed in the parent case. Independent Claims 2, 16, and 29 correspond to claims 20, 26, and 31 of the original parent case, which were identified as being directed to the subject matter of Group II. Rejected Claims 9 and 11-15 depend from Claim 2; rejected Claims 22, and 24-28 depend from Claim 16; and rejected Claims 40, 42-46 depend from Claim 29. Further Independent Claim 47 was rejected in the present case and is similar to Claim 42 of the original case which was directed to the subject matter designated Group IV by the Examiner. Rejected Claims 48 and 55-60 correspondingly depend therefrom. As such, Applicants respectfully submit that Claims 9, 11-15, 22, 24-28, 40, 42-48 and 55-60 are consonant with the restricted claims of the original case (U.S. Patent No. 6,602,814), and as such, are improperly rejected under the judicially created

obviousness type double patenting rejection, as it is prohibited in the present circumstance by 35 U.S.C. §121. Accordingly, Applicants request that the Examiner withdraw the rejection and allow Claims 9, 11-15, 22, 24-28, 40, 42-48 and 55-60.

#### **REJECTION UNDER 35 U.S.C. § 103**

Claims 9-13 and 22-26 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over WO 96/28384. Claims 29-30, 32-35 and 40-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,849,659. These rejections are respectfully traversed.

WO 96/28384 to Baldi, et al. (hereinafter referred to as the Baldi reference) discloses a pigment for varnish, plastics, or ceramics that has a perovskite crystal structure. *See e.g.*, page 1 line 5; and page 2 line 3. The Baldi reference does not disclose a composition or a corresponding crystal structure that would render it suitable for use as a thermal insulating material, nor does it disclose or suggest a process that would create such a thermal insulating material (correspondingly having a suitable crystal structure). A thermal insulating material is required by Claim 9. The Baldi reference does not disclose, nor does it suggest or motivate one of skill in the art to make a thermal insulating material, particularly one that is durable through extreme temperature conditions.

Additionally, the Baldi reference discloses a general formula for the pigment where there can be selection of not only the atoms, but also a vast range of different stoichiometries. None of the examples or explicitly disclosed compounds in Baldi disclose the explicit selection of the atoms required by Claim 9 (e.g., La). Such a wide

range of compounds can be arrived at by the formula disclosed in Baldi, that the formula does not lead one of skill in the art to recognize any benefit to, or even to arrive at a composition, such as that claimed in Claim 9, where  $M_2O_3$  is between 1 to 80 mol-% (where M is selected from La, Nd, or mixtures thereof), where MeO is from 0.5 to 80 mol-% (where Me is selected from Zn, the alkaline earth metals, transition metals, the rare earth metals, the rare earths, and mixtures thereof), and where the remainder is  $Al_2O_3$ . A claim is not rendered obvious where a prior art reference requires the selection of a large number of variables to arrive at a particular compound that is selected from a large number of possible compounds. In re Baird, 29 USPQ.2d 1550, 1552 (Fed. Cir. 1994). As such, Claim 9 is not rendered obvious by the Baldi reference. Likewise, Claims 10-13 which depend from Claim 9 (and hence from independent Claim 2) are not rendered obvious in light of the Baldi reference for the same reasons.

Claims 22-26 also stand rejected as being obvious over the Baldi reference. Claim 22 depends from independent Claim 16 and Claims 23 – 26 depend from Claim 22. Claim 16 relates to another method of producing a powder-like thermal insulating material. As discussed directly above, the Baldi reference does not disclose, nor does it teach or suggest to one of skill in the art a thermal insulating material, which requires special characteristics, including an appropriate crystal structure. Rather, the Baldi reference merely suggests a common perovskite structure for a pigment, which does not teach, suggest or motivate one of skill in the art to arrive at the thermal insulating material as recited in Claims 22 – 26. As such, for these reasons, the Baldi reference



fails to render Claims 9-13 and 22-26 obvious, and Applicants request withdrawal of the rejection.

Claims 29-30, 32-35 and 40-46 stand rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent No. 5,849,659 to Tanaka, et al. (hereinafter referred to as the Tanaka reference). Claims 30, 32-35, and 40 – 46 depend from independent Claim 29. The Tanaka reference does not render Claims 29-30, 32-35 and 40-46 obvious, for the following reasons. The Tanaka reference generally relates to making catalyst structures containing a noble metal for catalysis. Col. 1 lines 60 and 67. The Tanaka reference discloses mixing alcoholates of alkaline earth metals, manganese, aluminum and the like in an organic solvent, such as toluene or xylene. See Col 3 lines 5 – 6. The Tanaka reference does not disclose, nor does it suggest, making a powder-like thermally insulated material with starting materials selected from the group consisting of oxides and salts of M and Me soluble in water and/or alcohol (polar solvents). In contrast, the Tanaka reference discloses all the starting materials are in the form of alcoholates that are all soluble in non-polar solvents, such as xylene and toluene. There is no suggestion or motivation to select starting materials selected from the group of oxides and salts of M and Me soluble in polar solvents (water and/or alcohol) that are then mixed with an aluminum alcoholate to form a solution. Claims 30, 32-35, and 40 – 46 all depend from Claim 29, and based on the above discussion, are likewise not taught, suggested or rendered obvious in light of the Tanaka reference. Applicants submit that Claims 29-30, 32-35 and 40-46 are patentably non-obvious and allowable, and respectfully request that the rejections to be withdrawn.

### **ALLOWABLE SUBJECT MATTER**

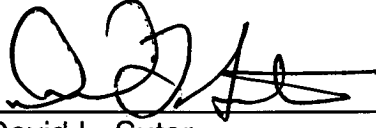
The Examiner has indicated that Claims 16-21 are allowable over the cited art of record and that Claims 3, 5-8, 31, 37, 38 and 49-54 would be allowable if rewritten in independent form. Accordingly, Applicants have amended Claim 49 to include the limitations of the rejected base claim. Claims 50 – 54 depend upon Claim 49. Applicants believe that Claims 31, 37, and 38 which depend from rejected Claim 29 are now allowable based upon the arguments presented above. Applicants have also amended Claims 2, 4, 36 and 39 according to the Examiner's suggestions. Applicants thank the Examiner for the thorough consideration of the claims and allowance of the indicated claims. Therefore, Claims 2, 3, 4, 5-8, 31, 36, 37, 38, 39 and 49-54 should now be in condition for allowance.

### **CONCLUSION**

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicants therefore respectfully request that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,

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